

## CLAIMS

1. An electropyrotechnic initiator comprising a box (1) of plastic material and a pyrotechnic charge (6), said charge (6) comprising at least one compound, characterised in that the box (1) contains two sub-assemblies:
  - a first sub-assembly (2) made in a single part containing a plastic wall (4) integral with a bottom (5) also made of plastic, having a face (15) and forming a content,
  - a second plastic sub-assembly (3) made of plastic having a main axis (10), traversed by at least two pins (11, 12) along the direction of said axis (10), said pins (11, 12) being connected together by an electric bridge (13) on a face (14) of said sub-assembly (3), said face (14) being hollowed symmetrically over a height H and a width L, said sub-assembly (3) forming a socket,
    - hermetic assembly of the first (2) and second (3) sub-assemblies is realised by ultrasonic welding,
    - and in that the internal diameter  $D_1$  of the first sub-assembly (2) is smaller than the external diameter  $D_2$  of the hollowed portion of the second sub-assembly (3).
2. An initiator according to claim 1, characterised in that the hollowed face (14) of the second sub-assembly (3) exhibits a symmetrical recess (17) with height h and width l to form a raised lump of the electric bridge (13).
3. An initiator according to any of the claims 1 or 2, characterised in that the plastic used to realise the first and second sub-assemblies is a material with low regain of humidity.
4. An initiator according to claim 3, characterised in that the plastic is a polyketone.
5. An initiator according to claim 3, characterised in that the plastic is a teraphthalate polybutylene (PBT).
6. An initiator according to claim 3, characterised in that the plastic is a polyamide.
7. An initiator according to claim 6, characterised in that the plastic is the polyamide PA 6.12.
8. An initiator according to any of the claims 1 to 7, characterised in that the second sub-assembly (3) is moulded over the pins (11, 12).
9. An initiator according to claim 8, characterised in that the pins (11, 12) comprise electrodes.

10. An initiator according to claim 9, characterised in that the electrodes are scored.

11. An initiator according to any of claims 2 to 10, characterised in that the vacuum height  $h'$  is smaller than the height  $h + H$ ,  $H$  being the height of the welding heel,  $h$  the height of the lump and  $h'$  the differential height between the outmost external layer (9) of the pyrotechnic charge (6) after pre-compressing the compounds and the face (15) of the content (2).

12. An initiator according to any of claims 1 to 11, characterised in that the ultrasonic welding joint (16) is a shear joint.

10 13. An initiator according to any of claims 1 to 11, characterised in that the ultrasonic welding joint is a semi shear-joint.

14. A method for assembling an electropyrotechnic initiator characterised in that it comprises :

- the realisation of a first sub-assembly (2) and of a second sub-assembly (3) according to any of claims 1 to 10 ;
- said first sub-assembly (2) receiving a pyrotechnic charge (6) by a dry loading process; and
- the assembly made by ultrasonic welding of said first sub-assembly and said second sub-assembly.

20 15. A method for assembling an electronic initiator according to claim 14, characterized in that the pyrotechnic charge comprises a primary compound (8) and a secondary compound (7), each of compound (7, 8) of the pyrotechnic charge being pre-compressed.

25 16. A method for assembling an electrotechnic initiator according to claim 15, characterised in that the pre-compression is realised with a pressure smaller than 120 bars for the primary compound (8) and with a pressure greater than 150 bars for the secondary compound (7).